

# **ABSTRACT OF THE INVENTION**

An imaging apparatus is disclosed. The imaging apparatus includes a motorized stage, a camera focussed relative to the stage, and a processor coupled to the camera. The processor contains instructions which, when executed by the processor, cause the processor to capture an image incident on the camera, convert the image into a plurality of pixels having a characteristic such as intensity, establish the characteristic for each pixel; and determine which pixels contain a target image based on the characteristic of the pixels. Another imaging apparatus includes a motorized stage, a camera having a lens directed toward the motorized stage, and a processor coupled to the camera. The processor contains instructions which, when executed by the processor, cause the processor to select at least three regions of a sample adjacent the motorized stage, develop a focus surface based on a normalized distribution of the at least three selected regions, position the camera on a region of the sample, focus the camera on the surface, and capture an image of the region. In addition, an imaging apparatus having a motorized stage, a camera focussed relative to the motorized stage, a stage position sensor adjacent the motorized stage, and a pulsed light directed toward the motorized stage and coupled to the stage position sensor such that the pulsed light illuminates in response to the stage position sensor is disclosed.